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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,496	12/30/2004	Yuzo Yoneyama	Y0647.0150	5396

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EXAMINER	
WEST, JEFFREY R	

ART UNIT	PAPER NUMBER
2857	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/519,496	YONEYAMA, YUZO	
	Examiner	Art Unit	
	Jeffrey R. West	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the After Final Response filed on July 13, 2007, PROSECUTION IS HEREBY REOPENED. A new grounds of rejection is set forth below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 4, 7, 9, 10, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,542,097 to Ward et al. in view of U.S. Patent No. 6,278,879 to Western et al.

With respect to claim 1, Ward discloses an error detecting device characterized by comprising notification receiving means for receiving, from at least one communication terminal of a communication partner (column 9, lines 28-40 and Figure 6), and outputting notification of both a reception power of a first signal transmitted from a main apparatus to said communication terminal (column 6, lines 61-62) and a transmission power of a second signal transmitted from said communication terminal to said main apparatus (column 6, line 66), determining means for determining and outputting a reception power of said second signal transmitted from said

communication terminal to said main apparatus (column 6, lines 57-58) and a transmission power of said first signal transmitted from said main apparatus to said communication terminal (column 6, line 56), propagation loss calculating means for calculating bidirectional propagation losses between said communication terminal and said main apparatus, from said reception and transmission powers of said first signal and from said reception and transmission powers of said second signal (column 7, lines 16-38), difference checking means for checking whether a difference between the bidirectional propagation losses falls within a predetermined allowable range (column 8, lines 34-48); and determining means for determining that a transmitter or a receiver of at least one of said communication terminal and said main apparatus has an error, if said difference checking means determines that the difference falls outside the predetermined allowable range (column 9, lines 1-27) and for identifying said transmitter or receiver that has an error based on whether the difference falls outside the allowable range, and whether a propagation loss of the propagation path to said main apparatus is smaller than a propagation loss of a propagation path to each said communication terminal (i.e. an error is determined if the propagation loss to the main apparatus is smaller than a propagation loss to either communication terminal when such a smaller propagation loss to the main apparatus would cause an inequality in equation 9) (column 9, lines 1-27).

With respect to claim 2, Ward discloses further comprising a plurality of communication terminals, communicatively coupled to the base station via

respective communication paths (column 6, lines 57-67), wherein, for each of said plurality of communication terminals, said notification receiving means receives (column 6, lines 57-67), notification of both a reception power of a first respective signal transmitted from said main apparatus (column 6, lines 61-62) and a transmission power of a second respective signal transmitted to said main apparatus (column 6, line 66), said determining means determines, for each communication terminal, the reception power of the second respective signal (column 6, lines 57-60) and the transmission power of the first respective signal (column 6, line 56), said propagation loss calculating means calculates, for each communication terminal, a respective bidirectional propagation loss between each respective communication terminal and said main apparatus, from said notification of both the reception power of the first respective signal transmitted from said main apparatus and the transmission power of the second respective signal transmitted to said main apparatus from the respective communication terminal (column 7, lines 16-38), said difference checking means checks, for each communication terminal, whether a difference between the respective bidirectional propagation losses falls within a predetermined allowable range (column 8, lines 34-48), and said determining means determines that a transmitter or receiver of at least one of said communication terminals and main apparatus has an error, if said difference checking means determines that the difference between the respective bidirectional propagation losses for at least one communication

terminals falls outside the predetermined allowable range (column 9, lines 1-27).

With respect to claim 4, Ward discloses that if said difference checking means determines that the difference falls outside the predetermined allowable range for at least one of said plurality of communication terminals, said determining means determines that a transmitter or receiver of each of said communication terminals, which is found to fall outside the predetermined allowable range has an error (column 6, lines 57-67 and column 9, lines 1-27).

With respect to claim 7, Ward discloses that if it is determined that a propagation loss of a propagation path to said main apparatus is equal to a propagation loss of a propagation path to each of said at least one communication terminal, said determining means determines that said communication terminal and main apparatus are normal (column 9, lines 1-27).

With respect to claim 9, Ward discloses an apparatus for detecting an error in a transmitter or a receiver, the apparatus comprising: a notification receiver (column 9, lines 28-40 and Figure 6) configured to determine a reception power of a first signal transmitted by a base station to at least one communication terminal (column 6, lines 61-62) and configured to determine a transmission power of a second signal transmitted by the communication terminal to the base station (column 6, line 66); a determination device configured to determine a transmission power of the first signal (column 6,

line 56) and a reception power of the second signal (column 6, lines 57-58); a propagation loss calculator configured to calculate an upstream propagation loss from the communication terminal to the base station and a downstream propagation loss from the base station to the communication terminal as a function of the transmission and reception powers of the first and second signals (column 7, lines 16-38); and a determination unit configured to indicate an error in the transmitter or the receiver if a difference between the upstream and downstream propagation losses exceeds a threshold value (i.e. an error is determined if the propagation loss to the main apparatus is smaller than a propagation loss to either communication terminal when such a smaller propagation loss to the main apparatus would cause an inequality in equation 9) (column 9, lines 1-27).

With respect to claim 10, Ward discloses that the propagation loss calculator calculates the downstream propagation loss as a function of the transmission and reception powers of the first signal and calculates the upstream propagation loss as a function of the transmission and reception powers of the second signal (column 7, lines 16-38).

With respect to claim 14, Ward discloses a method for detecting an error in a transmitter or a receiver, the method comprising: obtaining a reception power of a first signal transmitted by a base station to at least one communication terminal (column 6, lines 61-62) and a transmission power of a second signal transmitted by a communication terminal to the base station (column 6, line 66); determining a transmission power of the first signal

(column 6, line 56) and a reception power of the second signal (column 6, lines 57-58); calculating an upstream propagation loss from the communication terminal to the base station and a downstream propagation loss from the base station to the communication terminal as a function of the transmission and reception powers of the first and second signals (column 7, lines 16-38); and detecting an error in the transmitter or the receiver if a difference between the upstream and downstream propagation losses exceeds a threshold value (i.e. an error is determined if the propagation loss to the main apparatus is smaller than a propagation loss to either communication terminal when such a smaller propagation loss to the main apparatus would cause an inequality in equation 9) (column 9, lines 1-27).

With respect to claim 15, Ward discloses that the calculating step includes calculating the downstream propagation loss as a function of the transmission and reception powers of the first signal and calculating the upstream propagation loss as a function of the transmission and reception powers of the second signal (column 7, lines 16-38).

As noted above, the invention of Ward teaches many of the features of the claimed invention and while the invention of Ward does teach a handoff system including determining transmission level inaccuracies or measurement errors attributable to transmitter/receiver equipment based on pathloss differences (column 6, lines 13-16 and column 9, lines 1-14), Ward does not explicitly indicate that the pathloss differences indicate a failure in the transmitter/receiver.

Western teaches a method for determining a transmit power of a base station in a cellular communication system as part of a handoff system (column 2, line 65 to column 3, line 4) comprising means for determining a pathloss difference between a mobile and base device (column 3, lines 9-21 and 41-45) and determining that a significant pathloss difference indicates a required correction or a transmitter/receiver failure (column 1, lines 46-49 and column 3, lines 46-64 and column 4, lines 8-15).

It would have been obvious to one having ordinary skill in the art to modify the invention of Ward to explicitly indicate that the pathloss differences indicate a failure in the transmitter/receiver, as taught by Western, because, as suggested by Western, the combination would have improved the system of Ward by allowing for the compensation of measurement errors while providing the ability to determine more serious problems in the communication system though transmitter/receiver failure thereby increasing overall accuracy (column 3, lines 46-64).

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ward in view of Western and further in view of U.S. Patent Application Publication No. 2002/0058493 to Ikeda et al.

As noted above, the invention of Ward and Western teaches many of the features of the claimed invention and while the invention of Ward and Western does teach a difference checking means that determines whether there is a failure in the communication terminals when the difference falls

outside the allowable range, the combination does not explicitly indicate that when the difference falls outside the allowable range for all of the communication terminals, a determination is made that a transmitter or receiver of the main apparatus has a failure.

Ikeda teaches a retransmission control method and apparatus comprising a plurality of receivers that receive a signal transmitted from a main apparatus (0010, lines 1-2) and the plurality of receivers determine if the signal was received correctly or in error (0047, lines 1-4) wherein if all of the plurality of receivers receive the signal in error, it is the signal transmitted from the main apparatus (i.e. a failure in the main apparatus transmitter) that is has caused the error and the not plurality of receivers (0064, lines 5-11).

It would have been obvious to one having ordinary skill in the art to explicitly indicate that when the difference falls outside the allowable range for all of the communication terminals, a determination is made that a transmitter or receiver of the main apparatus has a failure, as taught by Ikeda, because, as suggested by Ikeda, and as one having ordinary skill in the art would recognize, when all of a plurality of receivers receive a signal in error, there is a high probability that it is the signal sent that contains an error as opposed to each of the receivers having error (0052, lines 1-13 and 0064, lines 5-11), therefore the combination would have improved the fault diagnosis of Ward and Western by logically determining when the signal is in error from a faulty main apparatus and not from the communication terminals themselves.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ward in view of Western and further in view of U.S. Patent Application Publication No. 2002/0064131 to Boesinger et al.

As noted above, the invention of Ward and Western teaches many of the features of the claimed invention and while the invention of Ward and Western does teach that when the difference falls outside the allowable range for at least one of the communication terminals, a determination is made that a transmitter or receiver of the communication terminal has a failure, the combination does not provide means for discriminating between a transmitter and receiver failure of the communication terminal.

Boesinger teaches a method for operating a data network wherein a fault is determined based on an increase in attenuation/propagation loss due to the failure/aging of either the transmitter or receiver that causes the increase in attenuation/propagation loss (0006).

It would have been obvious to one having ordinary skill in the art to modify the invention of Ward and Western to provide means for discriminating between a transmitter and receiver failure of the communication terminal, as taught by Boesinger, because as is well-known by one having ordinary skill in the art, and suggested by Boesinger, the device that causes an increase in attenuation is the device undergoing a fault and therefore, by determining whether it is the transmitter or receiver undergoing the fault, the combination would have improved the failure analysis by increasing the efficiency of fault detection by distinctly determining which device is failing (0006).

Further, since the invention of Ward and Western teaches determining that it is the communication terminal that has a failure and Boesinger teaches that an increase in attenuation/propagation loss is caused by a failure of either the transmitter or receiver, one having ordinary skill in the art would recognize that if the propagation path to the main apparatus is smaller than a propagation loss of a propagation path to each communication terminal, that the transmitter of the communication terminal is causing a smaller propagation loss than the receiver. Therefore, in light of the teachings of Boesinger, since the receiver of the communication terminal is causing the larger propagation loss, the receiver of the communication terminal has failed. Similarly, in a case in which the receiver of the communication terminal is not causing the larger propagation loss, the transmitter of the communication terminal has failed.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ward in view of Western and further in view of JP Patent Application Publication No. 63-200626 to Iwasaki et al.

As noted above, the invention of Ward and Western teaches many of the features of the claimed invention and while the invention of Ward and Western does teach a difference checking means that determines whether there is a failure in the communication terminals when the difference falls outside the allowable range, the combination does not explicitly include a

failure notifying means for notifying said communication terminal of a detected failure.

Iwasaki teaches an inductive communication system including a base station that determines when a propagation loss between a mobile station and the base station reaches a prescribed value and, using a corresponding means, notifies the base station of such propagation loss failure (abstract).

It would have been obvious to one having ordinary skill in the art to modify the invention of Ward and Western to explicitly include a failure notifying means for notifying said communication terminal of a detected failure, as taught by Iwasaki, because, as suggested by Iwasaki, the combination would have improved the operation of Ward and Western by preventing operation of the communication terminal with excessive propagation loss due to failed transmission by raising an alarm when the propagation loss reaches a prescribed value (Abstract).

7. Claims 5, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward in view of Western and Ikeda and further in view of U.S. Patent Application Publication No. 2002/0064131 to Boesinger et al.

As noted above, Ward in combination with Western and Ikeda teaches many of the features of the claimed invention and while the invention of Ward, Western, and Ikeda does teach that when the difference falls outside the allowable range for all of the communication terminals, a determination is made that a transmitter or receiver of the main apparatus has a failure, the

combination does not provide means for discriminating between a transmitter and receiver failure of the main apparatus.

Further, while the invention of Ward, Western, and Ikeda does teach that when the difference falls outside the allowable range for at least one of the communication terminals, a determination is made that a transmitter or receiver of the communication terminal has a failure, the combination does not provide means for discriminating between a transmitter and receiver failure of the communication terminal.

Boesinger teaches a method for operating a data network wherein a fault is determined based on an increase in attenuation/propagation loss due to the failure/aging of either the transmitter or receiver that causes the increase in attenuation/propagation loss (0006).

It would have been obvious to one having ordinary skill in the art to modify the invention of Ward, Western, and Ikeda to provide means for discriminating between a transmitter and receiver failure of the main apparatus, as taught by Boesinger, because as is well-known by one having ordinary skill in the art, and suggested by Boesinger, the device that causes an increase in attenuation is the device undergoing a fault and therefore, by determining whether it is the transmitter or receiver undergoing the fault, the combination would have improved the failure analysis by increasing the efficiency of fault detection by distinctly determining which device is failing (0006).

Further, since the invention of Ward, Western, and Ikeda teaches determining that it is the main apparatus that has a failure and Boesinger

teaches that an increase in attenuation/propagation loss is caused by a failure of either the transmitter or receiver, one having ordinary skill in the art would recognize that if the propagation path to the main apparatus is smaller than a propagation loss of a propagation path to each communication terminal, that the receiver of the main apparatus is causing a smaller propagation loss than the transmitter. Therefore, in light of the teachings of Boesinger, since the transmitter of the main apparatus is causing the larger propagation loss, the transmitter of the main apparatus has failed. Similarly, in a case in which the transmitter of the main apparatus is not causing the larger propagation loss, the receiver of the main apparatus has failed.

It would have been obvious to one having ordinary skill in the art to modify the invention of Ward, Western, and Ikeda to provide means for discriminating between a transmitter and receiver failure of the communication terminal, as taught by Boesinger, because as is well-known by one having ordinary skill in the art, and suggested by Boesinger, the device that causes an increase in attenuation is the device undergoing a fault and therefore, by determining whether it is the transmitter or receiver undergoing the fault, the combination would have improved the failure analysis by increasing the efficiency of fault detection by distinctly determining which device is failing (0006).

Further, since the invention of Ward, Western, and Ikeda teaches determining that it is the communication terminal that has a failure and Boesinger teaches that an increase in attenuation/propagation loss is caused by a failure of either the transmitter or receiver, one having ordinary skill in the

art would recognize that if the propagation path to the main apparatus is smaller than a propagation loss of a propagation path to each communication terminal, that the transmitter of the communication terminal is causing a smaller propagation loss than the receiver. Therefore, in light of the teachings of Boesinger, since the receiver of the communication terminal is causing the larger propagation loss, the receiver of the communication terminal has failed. Similarly, in a case in which the receiver of the communication terminal is not causing the larger propagation loss, the transmitter of the communication terminal has failed.

8. Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward in view of Western and further in view of U.S. Patent No. 6,411,818 to O'Reilly.

As noted above, the invention of Ward and Western teaches many of the features of the claimed invention and while the Ward and Western does teach a notification receiver determining a reception power of the first signal and a transmission power of the second signal, the combination does not explicitly indicate that such a determination is based on at least one notification transmitted by the communication terminal to the base station.

O'Reilly teaches a method for assessing path imbalance in mobile communication networks comprising a base station and at least one communication terminal in transmission/reception communication (column 2, lines 38-67) wherein a receiver determines a reception power of signal

transmitted by a base station and a transmission power of a signal transmitted by the at least one communication terminal based on at least one notification message transmitted by the communication terminal to the base station (column 1, line 56 to column 2, line 5).

It would have been obvious to one having ordinary skill in the art to modify the invention of Ward and Western to explicitly indicate that such a determination is based on at least one notification transmitted by the communication terminal to the base station, as taught by O'Reilly, because O'Reilly suggests that the combination would have provided a suitable method for communicating the power levels of Ward while allowing the reception power of the first signal to be based on the power actually received by the communication terminal (column 1, line 56 to column 2, line 5)

Response to Arguments

9. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure:

U.S. Patent No. 6,481,005 to Crowley et al. teaches event correlation feature for a telephone network operations support system wherein link failure causes path loss and a hardware failure causes a link failure.

U.S. Patent No. 6,978,150 to Hamabe teaches an apparatus and method for transmission power balance adjustment in a mobile cellular system wherein when a difference of a propagation loss is large, a probability of reception failure of an up control instruction from a base station having a larger propagation loss becomes high.

U.S. Patent Application Publication No. 2002/0016177 to Miya et al. teaches a transmission power control apparatus and radio communication apparatus.

U.S. Patent No. 5,487,176 to Yoneyama teaches a reception amplifier failure detection device and method for radio transceiver apparatus.

U.S. Patent No. 4,807,224 to Naron et al. teaches a multicast data distribution system and method.

U.S. Patent No. 6,400,953 to Furukawa teaches a CDMA type mobile radio communication system capable of realizing an effective system operation without excess and deficiency of radio base station simultaneously connected.

JP Patent Application Publication No. 10-276127 to Seki teaches radio base station equipment with fault detection function and mobile communication system using the same.

11. Any inquiry concerning this communication or earlier communications

from the examiner should be directed to Jeffrey R. West whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571)272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeffrey R. West
Primary Examiner
Art Unit – 2857

July 27, 2007